Non-technical Abstract

We are studying the possibility of slowing the growth of ovarian cancer by gene therapy: replacing the gene which is most commonly responsible for ovarian cancer, BRCA1. Research has shown that both inherited and non-inherited cases of ovarian cancer have defects in the BRCA1 gene, and that gene transfer of BRCA1 into ovarian cancer cells greatly inhibits their growth. By introducing a normal BRCA1 gene into ovarian cancer cells which contain a defective BRCA1 gene, we hope to stop the growth of the cancer cells by correcting the gene defect.Using a disabled mouse virus called a "vector", we change gene expression within the cancer cells so the cancer cells now grow more slowly and their spread is diminished.

Experiments in mice have shown that gene transfer of the BRCA1 gene into breast and ovarian cancers results in a marked decrease in the growth or spread of cancer. We have found no evidence of spread of the virus to other tissues within the body, and no apparent ill effects of the viral vectors. Based upon these findings, we propose a human clinical trial for patients with widespread ovarian cancer which has spread the peritoneal fluid which surrounds the stomach and intestines. In this study, patients will undergo injection of viral vector into the cancerous fluid in an attempt to induce regression of the cancer, and to stop the spread of the cancer cells. The patient population consists of women with ovarian cancer who have failed standard therapy and have metastatic ovarian cancer with an expected survival of a few months.